

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

1. (Currently amended): A centrifugal impeller comprising:

a plurality of blades disposed between an impeller inlet and an impeller outlet;

a plurality of fluid paths for delivering a fluid from said impeller inlet to said impeller outlet with the rotation of said centrifugal impeller, each of said fluid paths being formed between adjacent two of said blades; and

a shroud and a hub for forming said fluid paths;

wherein in a meridional-plane cross-section of said centrifugal impeller, a curved line of said shroud, which forms said fluid path, curves so as to project toward said hub in a region from a blade inlet to a predetermined position of said blade so that said fluid path is widened from said blade inlet to ~~[[aid]]~~ said predetermined position, and said curved line curves so as to project toward the opposite side of said hub in a region from said predetermined position of said blade to a blade outlet so that said fluid path is widened in a region downstream of said predetermined position and narrowed in the vicinity of said blade outlet.

2. (Original): A centrifugal impeller according to claim 1, wherein said predetermined position of said blade is located near a center of said blade in a meridional plane.

3. (Original): A centrifugal impeller according to claim 1 or 2, wherein stream lines formed at a side of said hub and a side of said shroud correspond to each other when viewed in an axial direction of said centrifugal impeller.

4. (Previously presented): A centrifugal impeller according to claim 1 or 2, wherein a distance between adjacent two of said blades is gradually increased from said blade inlet to said predetermined position of said blade, and is decreased from said predetermined position of said blade toward said blade outlet.

5. (Currently amended): A centrifugal impeller comprising:

a plurality of blades disposed between an impeller inlet and an impeller outlet, arranged at angularly equal intervals in a circumferential direction of said centrifugal impeller, and extending outwardly spirally;

a plurality of fluid paths for delivering a fluid from said impeller inlet to said impeller outlet with the rotation of said centrifugal impeller, each of said fluid paths being formed between adjacent two of said blades; and

a shroud and a hub for forming said fluid paths;

wherein a distance between adjacent two of said blades is gradually increased from a blade inlet to a predetermined position of said blade, and is decreased from said predetermined position of said blade toward a blade outlet.

6. (Original): A centrifugal impeller according to claim 5, wherein said predetermined position of said blade is located near a center of said blade in a meridional plane.

7. (Original): A centrifugal impeller according to claim 5 or 6, wherein stream lines formed at a side of said hub and a side of said shroud correspond to each other when viewed in an axial direction of said centrifugal impeller.

Amendment Under 37 C.F.R. §1.111
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8. (Currently Amended): A pump apparatus comprising:

a centrifugal impeller according to claim 1, 2, 5 or 6;

a casing for housing said centrifugal impeller; and

a rotatable main shaft to which said centrifugal impeller is attached.

9. (New): A centrifugal impeller according to claim 1, wherein in the meridional-plane cross-section, said hub has a straight line forming said fluid paths and being perpendicular to an axial direction of said centrifugal impeller.

10. (New): A centrifugal impeller according to claim 9, wherein said straight line extends from at least said predetermined position to said blade outlet.